

NOTES ON WESTERN AUSTRALIAN *BOSSIAEA* SPECIES
(FABACEAE): 2

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ABSTRACT

Ross, J. H. Notes on Western Australian *Bossiaea* species (Fabaceae): 2. *Muelleria* 8(2): 211–221 (1994). — The type material of *B. rufa* R.Br. in the Natural History Museum (BM) is found to consist of two different taxa. In view of the existence of these discordant elements, a lectotype is selected for *B. rufa* and a description of the species is provided. As no already published name is available for the second taxon, it is here described as *B. praetermissa* sp. nov.. *B. modesta* from the Mt Dale area in the Darling range is described as new.

THE APPLICATION AND LECTOTYPIFICATION OF THE NAME
BOSSIAEA RUFa R.Br.

Bossiaea rufa R.Br. (1812) was the first of the Western Australian flat-stemmed species of *Bossiaea* to be described. The description of *B. rufa* in the protologue is as follows:

“... ramis complanatis linearibus aphyllis: denticulis floriferis, carina fimbriata, bracteis superioribus caducis ab inferioribus remotis, calycibus glaberrimis. *Brown mss.*

Red-flower'd flat-stem'd *Bossiaea*.

Nat. of the South-West Coast of New Holland.

Introd. 1803, by Mr. Peter Good.

It is not clear from the protologue whether R. Brown based his description of *B. rufa* on a plant raised at Kew Gardens from seed introduced by Peter Good in 1803, on his own specimens collected on the south-west coast of Western Australia, or whether it was based on elements of both. The absence in BM of any cultivated material of *B. rufa* suggests that the description was based on Brown's own material of which there is one sheet. The sheet of R. Brown material in BM numbered 4831 consists of 4 pieces of plant material which represent two different taxa. The piece of material on the left hand side of the sheet, to the left of which is a label in Brown's hand which reads “*Platylobium* = *Bossiaea*/King George III^d Sound” represents one taxon. Below this label is another in Bentham's hand which reads “*Bossiaea rufa* R.Br.”. The three other pieces of material to the right represent the second taxon. Mounted at the foot of the sheet on top of the blue printed label is a label in Brown's hand which reads “*Platylobium pubescens*/King George III^d S^d.” In view of the presence of these discordant elements, it is necessary to determine which one most closely accords with the protologue so that the application of the name *B. rufa* can be established.

Superficially the two taxa are very similar so it is not surprising that they have been confused for a very long time. However, careful examination enables material to be sorted quite readily. The two taxa are differentiated most easily on the basis of whether the paired bracteoles on the pedicel are rapidly deciduous or persistent, by the nature of the indumentum, when present, on the calyx, and on whether or not the apices of the keel petals are glabrous or densely pubescent (see also Table 1).

In respect of the differential characters, in the material of the taxon represented on the left hand side of the sheet, the paired bracteoles are still evident on the

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pedicels of the young fruits which are at an early stage of development, the calyces are sparingly but distinctly pubescent, and the keel petals on the solitary remaining flower appear to be glabrous apically. In the material of the taxon represented on the right, the bracteoles are rapidly deciduous, the calyces are glabrous, and the keel petals are distinctly woolly apically.

Brown adopted the vernacular name "Red-flower'd flat-stem'd Bossiaea" for *B. rufa*. As indicated, the material on the left hand side of the Brown material in BM possesses the remains of the keel petals on a solitary inconspicuous flower and a few young fruits at a very early stage of development. In contrast, the central of the three pieces of material representing the taxon on the right bears a number of conspicuous relatively large flowers. It is almost a certainty that Brown adopted this vernacular name on the basis of this floriferous material of the taxon represented on the right hand side of the sheet.

It is clear that the taxon represented on the right hand side of the sheet of R. Brown material named *B. rufa* in BM is the one that agrees most closely with the protologue. This being the case, the material on the right hand side of the sheet is here chosen as the lectotype of *B. rufa*. The sheet of R. Brown material in CANB contains the same two elements that are found on the BM sheet. In the case of the CANB sheet, however, the plant material on the left hand side of the sheet accords with the protologue and is regarded as an isolectotype. The R. Brown material named *B. rufa* in MEL and PERTH consists entirely of the taxon represented on the left hand side of the sheet in BM which is described below as *B. praetermissa*.

BOSSIAEA RUFA SENSU BENTHAM (1864)

In his account of *Bossiaea* in *Flora Australiensis*, Bentham (1864) adopted a broad circumscription of *B. rufa* and included within it several species that had been recognized earlier. As justification for his decision to do so, Bentham commented 'The following forms, different as they look, pass much into each other; . . .' Confirmation of the difficulty that Bentham experienced is found in his letter to Mueller dated 12–16th October 1863 in which he wrote '16th I have just finished *Bossiaea* and have had a great deal of trouble with the aphyllous ones — Habit goes for little in Kew for without flowers it is difficult to distinguish *Bossiaea*s from some *Brachysemas* or from plants of quite different families — . . .'

Following the broad circumscription adopted by Bentham, the name *B. rufa* has been applied subsequently to both of the taxa represented by Brown's material. The lectotypification above preserves the application of the name *B. rufa*, but in a narrower sense.

The more abundant and better material now available indicates that three of the four taxa accorded varietal rank by Bentham merit specific rank.

The taxa recognised by Bentham were:

1. *B. rufa* var. *normalis* Benth.. This is the typical form of *B. rufa*.
2. *B. rufa* var. *oxyclada* (Turcz.) Benth.. This represents a flat-stemmed species (*B. oxyclada* Turcz.) which differs from *B. rufa* in being a more rigid and intricately branched shrub with spine-tipped branches. *B. oxyclada* is little-known and apparently seldom collected but its affinities are with another currently unnamed flat-stemmed species rather than with *B. rufa*.
3. *B. rufa* var. *foliosa* Benth.. This taxon differs from *B. rufa* in being a leafy rigid shrub with spine-tipped branches and was featured under the name *B. paucifolia* by Lindley (1842). The correct name for this taxon at species rank is *B. spinescens* C.F.W. Meissn.
4. *B. rufa* var. *virgata* (Hook.) Benth.. This is the same taxon as typical *B. rufa*.

It is unfortunate that the names *B. paucifolia* Benth. (1841) and *B. virgata* Hook. (1842) also apply to the taxon now known as *B. rufa* as this means that no

existing name is available for the second taxon collected by Brown. In order to remedy this deficiency, the name *B. praetermissa* is here adopted for this taxon which is described below.

As neither *B. oxyclada* nor *B. spinescens* is closely allied to *B. rufa*, they are not considered further here as they will be dealt with elsewhere. *B. rufa* and *B. praetermissa* are considered in some detail.

BOSSIAEA RUF A AND BOSSIAEA PRAETERMISSA

Bossiaea rufa R.Br. in W.T.Aiton, Hortus Kewensis edn 2, 4:267 (1812); DC., Prodr. 2:117 (1825). TYPE: King Georges Sound, Western Australia, *R. Brown 4831* (BM, the three pieces of plant material mounted on the right hand side of the sheet here selected as the lectotype).

Bossiaea paucifolia Benth. in Lindley, Edwards's Bot. Reg. 27 misc.: 53, no. 108 (1841), *non sensu* Lindley, Edwards's Bot. Reg. 29:63 (1843); Walp., Repert. Bot. Syst. 1:578 (1842); C.F.W. Meissn. in Lehm., Pl. Preiss. 1:81 (1844). TYPE: Swan River, Western Australia, 1839, *J. Drummond* (CGE, lectotype here chosen).

Bossiaea virgata Hook., Bot. Mag. t.3986 (1842); Walp., Repert. Bot. Syst. 2:833 (1843). *Bossiaea rufa* var. *virgata* (Hook.) Benth., Fl. Austral. 2:166 (1864). TYPE: Swan River, Western Australia, *J. Drummond 56* (K, lectotype here chosen).

Bossiaea rufa var. *normalis* Benth., Fl. Austral 2:166 (1864). TYPE: as for *B. rufa*.

Lax many-stemmed shrub to 2 m high, stems erect or straggling and supported by surrounding vegetation, flattened, winged and up to 10 mm wide, incised at the nodes, leafless or with copious leaves, especially on the younger growth, glabrous or sparingly pubescent with appressed or slightly spreading hairs especially when young. *Leaves* unifoliolate: lamina obovate, obovate-oblong, elliptic to narrow-elliptic, 7–29 mm long, 2.2–10 mm wide, rounded, obtuse, emarginate or mucronate apically, glabrous throughout or with occasional scattered appressed hairs below; petiolule 1.5–4.5 mm long, glabrous. *Stipules* 1–3 mm long, (0.4)0.7–1 mm wide, ovate or narrowly ovate, often oblique and asymmetric basally, longitudinally striate, usually glabrous apart from marginal cilia and scattered hairs towards the apex, sometimes the opposing stipules united laterally for much of their length. *Flowers* solitary or paired, axillary when leaves present, pedicellate, the pedicels (3)5–10 mm long, glabrous or sometimes sparingly pubescent. *Bracts* ovate, 1–2 mm long, 0.6–1.2 mm wide, usually rapidly deciduous and only visible in young bud, scarious, glabrous or with marginal cilia, longitudinally striate. *Bracteoles* narrow-elliptic, 1.3–2.5(3.5) mm long, 0.8–1.2 mm wide, rapidly deciduous and only visible in young bud, scarious, glabrous or with marginal cilia, often inserted above the middle of the pedicel. *Calyx* glabrous or sparingly pubescent especially towards the apices of the lobes; 2 upper lobes 3.7–5.2 mm long including the tube 2–3.6 mm long, the apices of the lobes diverging, 3 lower lobes 1.2–1.8 mm long. *Standard* 9.5–12.2 mm long including a claw 3.5–4.2 mm long, 8.6–11.7 mm wide, deep yellow internally with a deep purplish-red horse-shaped flare around a basal yellow throat, yellow with maroon, red or white striations externally sometimes giving a somewhat marbled appearance. *Wings* 8.1–8.9 mm long including a claw 3.2–3.5 mm long, 2.3–2.5 mm wide, reddish. *Keel* petals 7.2–7.5 mm long including a claw 3.2–3.7 mm long, 2.5–3 mm wide, reddish, densely pubescent or woolly apically. *Stamen-filaments* 6.2–8.7 mm long. *Ovary* 5–6.8 mm long, stipitate, (5)7–10-ovulate, glabrous. *Pods* oblong, 2.5–3.8 cm long, 0.6–0.7 cm wide, the stipe about as long as or exceeding the persistent calyx, valves thin, inconspicuously transversely striate, glabrous. *Seeds* ellipsoid, 2.3–2.5 mm long, 1.4–1.7 mm wide, uniformly reddish-brown, small hilum covered by a hooded cap-like aril.

DISTRIBUTION

Occurs in the Darling (? and Eyre) Botanical Districts of the Southwestern Botanical Province of Western Australia as defined by Beard (1980) from Roleystone on the Canning River south-east of Perth south to Augusta and eastwards to near Albany with an outlier at Phillips River. The Phillips River record is based on a specimen (MEL 664669) bearing the name *B. rufa* in Mueller's hand which lacks a collector or date. As this record is so far east of other known occurrences of the species, it is not inconceivable that the label and specimen do not belong together. Confirmation of the existence of *B. rufa* in the Phillips river area is desired. (Fig. 1)

HABITAT

Favours moist situations in sandy, alluvial or peaty soils or amongst rocks along stream banks and near swamps.

REPRESENTATIVE SPECIMENS (47 examined)

Western Australia — Blackwood River, *A. Olfield s.n.* (MEL 664706); Serpentine River, 1 Dec. 1877, *F. Mueller s.n.* (MEL 563561); Canning River, Croydon rd., Roleystone, 8 Oct. 1967, *G. Heinsohn 147* (PERTH); St John Brook at Cambray, 26 Nov. 1975, *A.S. George 14224* (PERTH); Frankland River bridge, 16 Nov. 1978, *E. Wittwer 2241* (PERTH); on Alamo Creek, Conveyor Belt route crossing, Bell Block, 29 Aug. 1980, *A.S. Weston 12635* (PERTH); 6 km SE of Donnelly River Mill, 14 Dec. 1980, *G.J. Keighery 3650* (PERTH); Glenoran Pool, Donnelly River near One Tree Bridge, c. 20 km W of Manjimup along Graphite road, 10 Jan. 1993, *T.D. Macfarlane 2140* (MEL, PERTH).

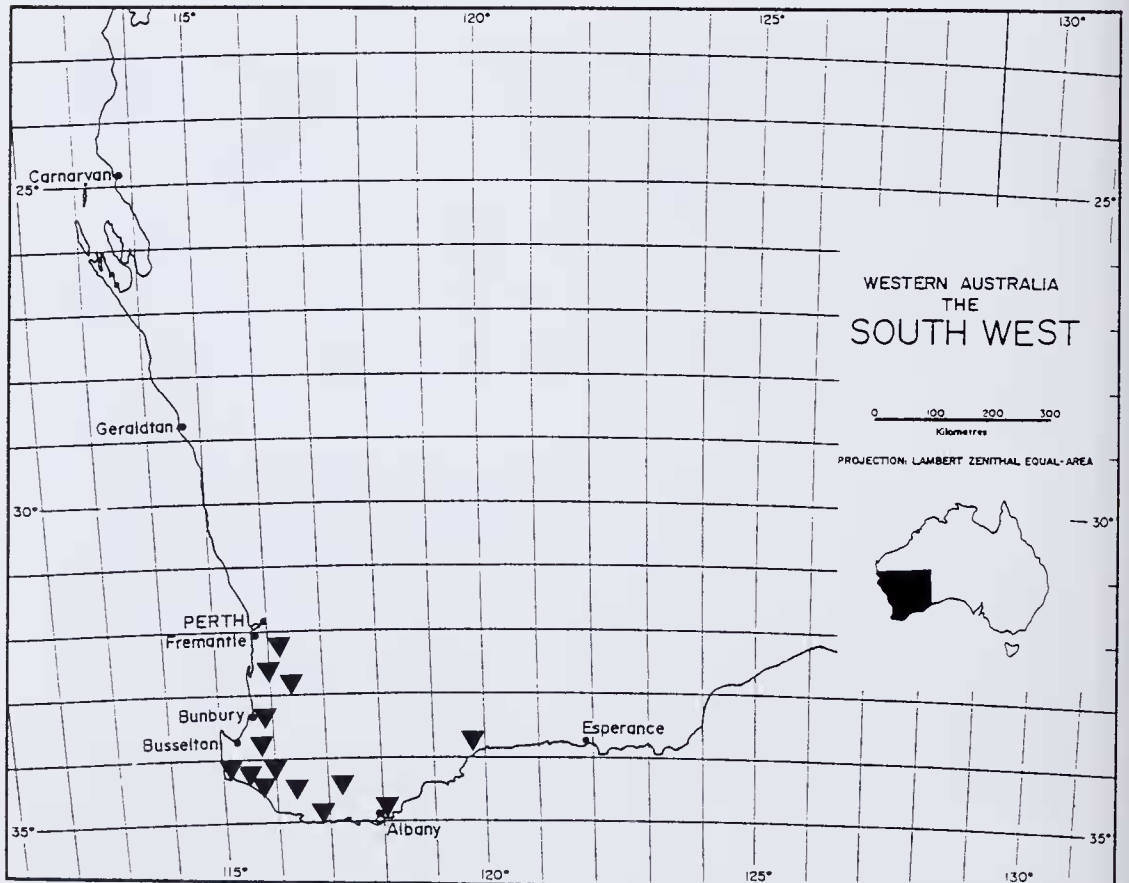


Fig. 1 The known distribution of *Bossiaea rufa*.

TYPIFICATION

The protologue of *B. paucifolia* Benth. reads 'A little Swan River bush, . . . I have been favoured with specimens by R. Mangles, Esq. of Sunning Hill, and by Messrs. Lowe & Co. of Clapton, and it has also flowered in the garden of the Horticultural Society.' I have been unable to examine the material at CGE but Peter Weston kindly did so on my behalf. There are at CGE no specimens named *B. paucifolia* collected by Mangles or associated with the nursery of Lowe & Co. or the Horticultural Society. However, there is a Drummond specimen which formed part of Lindley's herbarium labelled 'Swan River, Drummond, 1839' which bears the annotation 'Bossiaea pauciflora *Bentham mss.*/_____ *virgata Bot. Mag.*'

The label of a specimen of Drummond 258 at K reads 'Bossiaea rufa Br. ex Meisn./*B. paucifolia* ? Benth. fide Meisn./ . . . *virgata* Hook./ Sw. riv.' but there is no means of knowing whether this is part of the same set as the unnumbered Drummond specimen at CGE.

In the absence of a specimen at CGE associated with Mangles, Lowe & Co. or the Horticultural Society, and in the absence of reference to a published plate in the protologue of *B. paucifolia*, the Drummond specimen at CGE assumes much significance. It was collected two years prior to the publication of the name, bears the annotation 'Bossiaea paucifolia *Bentham mss.*', and is labelled 'Swan River'. Circumstantial evidence suggests that the specimen formed one of the elements used in formulating the concept of the species. In the absence of any other material that can be associated more directly with the protologue, and in the absence of any information to the contrary, I here select the Drummond specimen at CGE as the lectotype of *B. paucifolia*.

The protologue of *B. virgata* Hook. reads 'A Swan River species, detected and introduced to this country by Mr. James Drummond, by seeds, received by Mr. Murray in the Glasgow Botanic Garden, where the plant flowered in June, 1842. Specimens have also been sent over for the Herbarium, marked in Mr. Drummond's first collections, No. 56.' I have not located a specimen taken from the plant cultivated in the Glasgow Botanic Garden. I here select Drummond No. 56 from Swan River in Herbarium Hookerianum at K as the lectotype of *B. virgata*.

Bentham based his description of *B. rufa* var. *normalis* on R. Brown's material from King Georges Sound, Drummond 5th series No. 84 or 87, and a Maxwell collection from Phillips River. I here select the material mounted on the right hand side of the sheet of the R. Brown collection numbered 4831 in BM from among these syntypes as the lectotype of *B. rufa* var. *normalis*.

NOTES

B. rufa and *B. praetermissa* are superficially very similar and have long been confused. *B. praetermissa* differs from *B. rufa*, however, in that the paired bracteoles on the pedicels persist and are present even when the young fruits are developing, whereas in *B. rufa* the bracteoles are rapidly deciduous and are visible only when the flower-buds are young. In addition, there are a number of other differential tendencies. In *B. rufa* the pedicels tend to be longer, the nature of the indumentum on the calyx, when present, differs, the stipules tend to be larger and more conspicuously longitudinally striate, the standard petals tend to be larger, and the keel petals are invariably densely woolly pubescent apically. The differences are listed in Table 1.

Flowering time in the two species appears to differ. *B. praetermissa* usually flowers during September and October although flowering specimens have been collected as early as July and as late as early November, whereas *B. rufa* usually flowers in November and December.

B. rufa tends to be a more robust plant and favour moister sites than *B. praetermissa* and the leaves tend to be more numerous and longer.

Table 1. Differences between *B. rufa* and *B. praetermissa*

Characters	<i>B. praetermissa</i>	<i>B. rufa</i>
Bracteoles	0.6–1.5 mm long, 0.2–0.5 mm wide, persistent.	1.3–2.5(3.5) mm long, 0.8–1.2 mm wide, rapidly deciduous.
Pedicels	2–5 mm long, clothed with short spreading hairs.	(3)5–10 mm long, glabrous or sometimes sparingly pubescent.
Calyx	clothed with short spreading hairs.	glabrous or sparingly pubescent, especially towards the apices of the lobes.
Stipules	0.7–2.5 mm long, 0.2–0.5 mm wide, narrowly triangular, sometimes oblique basally, not conspicuously striate.	1–3 mm long, (0.4)0.7–1 mm wide, ovate or narrowly ovate, often oblique and asymmetric basally, conspicuously longitudinally striate.
Standard	7.5–9.5 mm long, 7–9 mm wide.	9.5–12.2 mm long, 8.6–11.7 mm wide.
Keel petals	usually glabrous apically but sometimes sparingly ciliate or pubescent apically.	densely pubescent or woolly apically.
Flowering	September–October (early November).	November–December (early January).

The distributions of *B. rufa* and *B. praetermissa* overlap in the south-west from approximately Scott River to Albany (see Figs. 1 & 2).

***Bossiaea praetermissa* J.H.Ross sp. nov.**

Bossiaea rufa sensu Maund, Botanist 2:t.81 (1838), non R.Br. (1812).

Bossiaea ensata sensu C.F.W.Meissn. in Lehm., Pl. Preiss. 1:81 (1844), non Sieb. ex DC. (1825).

B. rufae R.Br. affinis, a qua planta multo minori debiliore, bracteolis semipersistentibus, calycibus pubescentibus et carinis plerumque apicibus glabris.

TYPUS: Western Australia, Albany, hillside above Middleton Beach, 18 Oct. 1985, M.G. Corrick 9689 (HOLOTYPUS: MEL; ISOTYPI: K, PERTH)

Lax many-stemmed shrub to 1 m high, stems prostrate or straggling and often supported by surrounding vegetation, flattened, winged and up to 7 mm wide, incised at the nodes, leafless or with scattered leaves, glabrous or sparingly appressed pubescent with antrorse appressed hairs especially when young or occasionally the hairs spreading and up to 0.25 mm long. *Leaves* unifoliolate: lamina rotund, obovate, or obovate- to elliptic-oblong, 6–18 mm long, (3.5)6–10(12) mm wide, rounded, obtuse, emarginate or slightly mucronate apically, glabrous throughout or with scattered appressed hairs below especially basally; petiolule 1–3.5 mm long, glabrous. Stipules 0.7–2.5 mm long, 0.2–0.5 mm wide, narrowly triangular, sometimes oblique basally, not or inconspicuously longitudinally striate. *Flowers* solitary or paired at the nodes (rarely in threes), axillary when leaves present, pedicellate, the pedicels 2–5 mm long, clothed with short spreading hairs. *Bracts* ovate or oblong, 0.7–1.5 mm long, 0.4–1 mm wide, usually pubescent at least apically and margins ciliate, inconspicuously longitudinally striate. *Bracteoles* oblong, 0.6–1.75 mm long, 0.2–0.5 mm wide, persistent even when in young fruit, inserted towards the middle of the pedicel, often pinkish-red, margins ciliate, inconspicuously longitudinally striate. *Calyx* usually densely clothed with short spreading hairs but sometimes the hairs very sparse, often pinkish-red; 2 upper lobes 4–5 mm long including the tube 2.7–3.5 mm long, the apices of the lobes diverging, 3 lower lobes 1.1–1.5 mm long. *Standard* 7.5–9.5 mm long including a claw 3.5–4.5 mm long, 7–9 mm wide, deep yellow internally with a deep purplish-red or brown horse-shoe shaped flare around a basal yellow throat, yellow with maroon, red or pale striations externally sometimes giving a somewhat marbled appearance. *Wings* 6.5–8.3 mm long including a claw 3–3.5 mm

long, 1.5–2.8 mm wide, reddish or maroon. *Keel* petals 6.4–7.8 mm long including a claw 3–3.7 mm long, 2.2–3 mm wide, reddish, usually glabrous apically but sometimes sparingly ciliate or pubescent. *Stamen-filaments* 5.5–8.2 mm long. *Ovary* 5–6.1 mm long, stipitate, 7- or 8-ovulate, glabrous. *Pods* oblong, 2–2.5 cm long, 0.5–0.6 cm wide, stipe shorter than to as long as the persistent calyx, valves thin, inconspicuously transversely striate, glabrous. *Seeds* ellipsoid, 2.1–2.4 mm long, 1.3–1.4 mm wide, uniformly reddish-brown or sometimes mottled, small hilum covered by a hooded cap-like aril.

DISTRIBUTION

Occurs in the Darling and Eyre Botanical Districts of the Southwestern Botanical Province of Western Australia as defined by Beard (1980) from near Yallingup west of Busselton to Mt Ragged north-east of Esperance. (Fig. 2)

HABITAT

Found most commonly in sandy soils in coastal heath but also recorded in peaty or sandy clay on the margins of swamps, in mallee and jarrah woodland, on limestone rises and on granitic ridges.

REPRESENTATIVE SPECIMENS (48 examined):

Western Australia — 16 km E of Manjimup, 24 Oct. 1947, *R.D.Royce* 2358 (PERTH); near Bremer Bay, 27 Oct. 1965, *A.S.George* 6943 (PERTH); c. 12 km S of Yallingup, 2 Sep. 1982, *C.E.Woolcock* s.n. (MEL 651248); Scott River Plains, 1 km N of Brennan's Ford on Courtney road, 3 Oct. 1982,

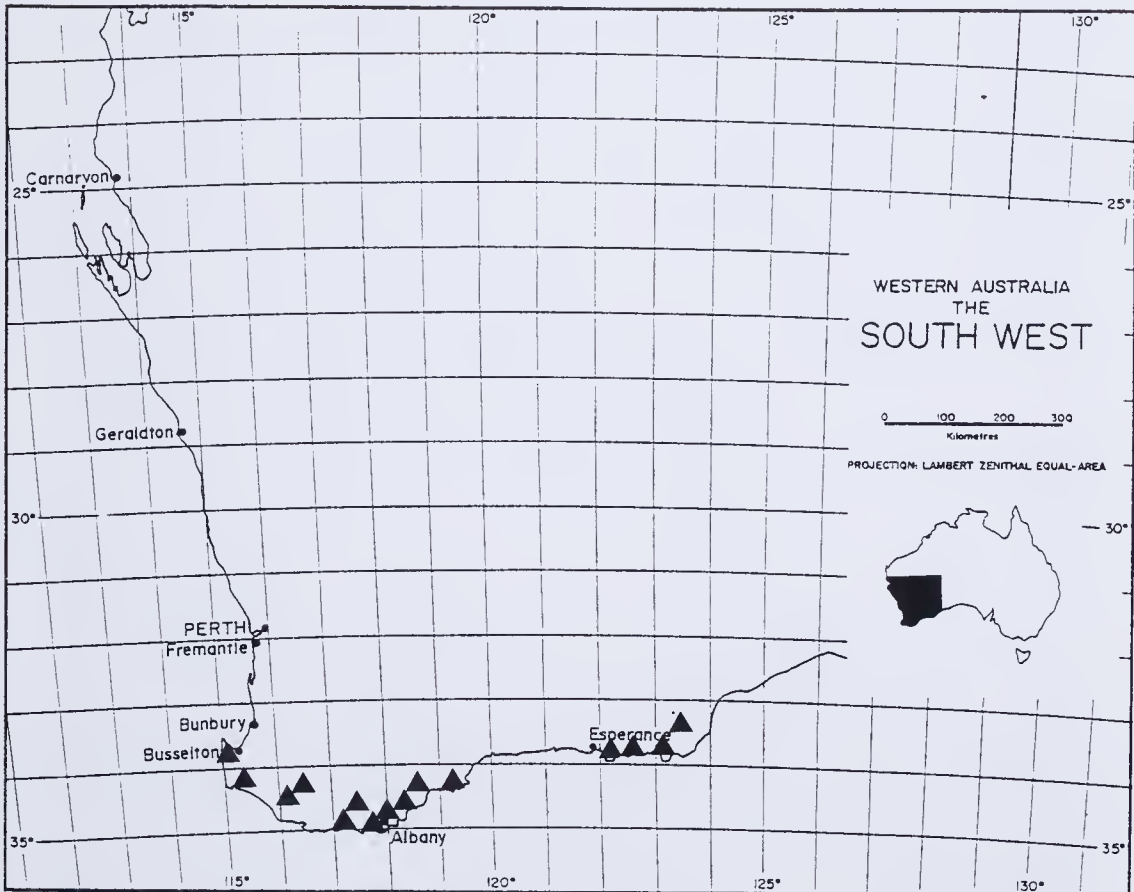


Fig. 2 The known distribution of *Bossiaea praetermissa*.

G.J. Keighery 5577 (PERTH); Hay River crossing on Albany-Denmark road, 19 Sep. 1983, *J. Taylor 1965* & *P. Ollerenshaw* (CBG, MEL); Cape Le Grande National Park, Rossiter Bay, 24 Sep. 1985, *M.G. Corrick 9527* (MEL); Salt River Rd., near Camel Lake, Stirling Range, 14 Sep. 1987, *G.J. Keighery 9764* (PERTH); 12 km toward Denmark from Muir Highway on Denmark-Mt Barker road, 28 Nov. 1992, *T.D. Macfarlane 2081* & *H.R. White* (MEL, PERTH).

NOTES

In the absence of a preserved specimen, it is difficult to determine whether or not the plant featured under the name *B. rufa* in Lodd., Bot. Cab. 12:t.1119 (1826), is in fact *B. praetermissa* rather than *B. rufa*. It is referred here to *B. praetermissa* with some hesitation.

The specific epithet alludes to the fact that the existence of this taxon appears to have been overlooked since the first specimen was collected almost two hundred years ago.

BOSSIAEA MODESTA

Bossiaea modesta J.H. Ross sp. nov.

Affinitatis incertae, forsan *B. rufae* R. Br. et *B. praetermissae* J.H. Ross affinis, a qua uterque planta multo minori debili caulibus gracilibus leviter applanatis ad 2mm latis qua non profunde nodus incisus, differt; qua *B. rufae* bracteolis semipersistentibus et *B. praetermissae* carinis apicibus dense lanatis, differt.

TYPUS: Western Australia, Darling Range, Mt Dale area, 6 Nov. 1983, *M.G. Corrick 9020* (HOLOTYPE: MEL; ISOTYPE: CBG, PERTH)

Subshrub, stems lax, slender, trailing and twining and only becoming erect when supported by surrounding plants, subterete basally but the extremities somewhat flattened, up to 2.0 mm wide, glabrous or with scattered hairs. *Leaves* alternate, unifoliolate: lamina linear- to elliptic- or obovate-oblong, 0.9–2.8 cm long, 0.25–0.6 cm wide, apex obtuse and mucronate, glabrous throughout or with occasional scattered hairs on margins and midrib; petiolule 0.5–2.0 mm long, glabrous. *Stipules* 0.5–1.6 mm long, 0.2–0.4 mm wide, usually almost as long as the petiolule, obliquely triangular or subulate, glabrous throughout or pubescent apically. *Flowers* axillary, solitary, pedicellate, the filiform pedicels 1.2–2.5 cm long, glabrous throughout or with scattered hairs. *Bracteoles* 0.8–1.6 mm long, 0.3–0.5 mm wide, inserted just below the calyx and more or less appressed to the pedicel or base of the calyx while the flowers are young, scarious, glabrous or with scattered hairs, persisting at least until the young fruits are initiated; bract 0.9–1.8 mm long, 0.3–0.5 mm wide, inserted at the base of the pedicel, scarious, rapidly deciduous, glabrous except for apical cilia. *Calyx* glabrous or with occasional scattered hairs externally apart from marginal cilia; 2 upper lobes 4.2–5 mm long including the tube 2.8–3.5 mm long, the apices of the lobes diverging, 3 lower lobes triangular, 1.5–1.6 mm long, 1.0–1.1 mm wide. *Standard* 9.8–10.0 mm long including a basal claw 3 mm long, 9 mm wide, deep yellow internally with a deep red flare around a paler yellow throat, with numerous red to purplish longitudinal striations externally and sometimes having a somewhat marbled appearance; *wing petals* 8 mm long including a claw 2.6 mm long, 2.1 mm wide, red; *keel petals* 8–8.3 mm long including a claw 2.8–3.3 mm long, 2.5–2.9 mm wide, greenish-white basally, red apically, with a dense woolly apical fringe of hairs. *Stamen-filaments* 6.2–8.2 mm long. *Ovary* on a stipe 2–2.5 mm long, 4.5–4.8 mm long, glabrous, 6–8-ovulate; style 1.7–2 mm long. *Pods* oblong, up to 3.5 cm long including a stipe up to 1 cm long which greatly exceeds the persistent calyx in length, 0.4–0.5 cm wide, glabrous. *Seeds* ellipsoid, olive-brown, 1.5–1.8 mm long, 1.0–1.3 mm wide, the small hilum covered by a hooded cap-like aril. (Fig. 3)

DISTRIBUTION

Restricted in distribution to the Mt Dale area in the Darling Range south-east of Perth where it occurs in State Forest.

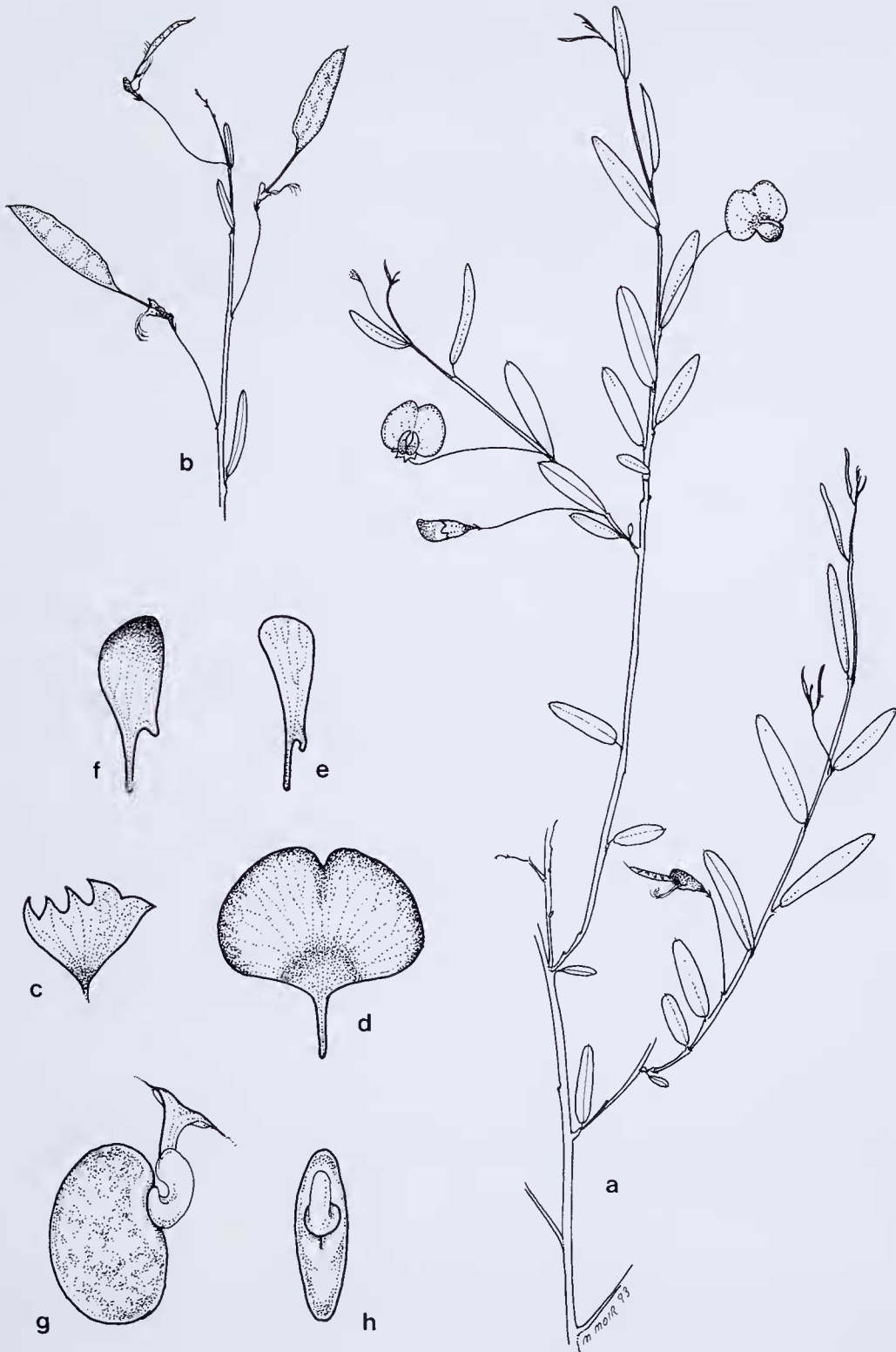


Fig. 3. *Bossiaea modesta*. a — flowering twig, $\times 1$; b — fruiting twig, $\times 1$; c — calyx opened out (upper lobes on right), $\times 3$; d, — standard, $\times 3$; e — wing petal, $\times 3$; f — keel petal, $\times 3$; g — seed, side view, $\times 15$; h — seed, hilar view, $\times 15$. a from M.G. Corrick 10970A; b, g & h from M.G. Corrick 11025; c-f from M.G. Corrick 9020.

HABITAT

Favours the banks of small creeks and damp sites in open *Eucalyptus marginata* — *E. calophylla* forest where the stems trail amongst surrounding plants. Often found in association with *Xanthorrhoea* spp..

CONSERVATION STATUS

Poorly known, CALM Priority 2. The species is known only from two small populations 1.8 km apart, although it is not inconceivable that a thorough search will disclose further populations near some of the small creeks that feed into the Canning River. A visit by Margaret Corrick to the area in September 1992 revealed that the habitat at one site had deteriorated since a previous visit and was heavily trampled. The population was threatened further by maturing plants of the introduced *Eucalyptus grandis* W.Hill ex Maiden.

SPECIMENS EXAMINED

Western Australia — Darling Range, Mt Dale area, 10 Oct. 1985, M.G. Corrick 9646, 9647, 9648 (MEL, PERTH); 27 Nov. 1992, M.G. Corrick 10970A (MEL); 20 Dec. 1992, M.G. Corrick 11025 (MEL).

FLOWERING PERIOD

October to December.

NOTES

The affinities of *B. modesta* are not clear. *B. modesta* is possibly allied to *B. rufa* and to *B. praetermissa* from each of which it differs in being a much smaller weaker plant with slightly flattened stems up to 2 mm wide which are not as conspicuously incised at the nodes. The leaves of *B. modesta* and the long filiform pedicels are reminiscent of *B. rufa*, but, unlike *B. rufa* where the bracteoles are rapidly deciduous, the bracteoles of *B. modesta* persist at least until the young fruits start developing. The apices of the keel petals in *B. modesta* are densely woolly, as is the case in *B. rufa*.

The bracteoles in both *B. modesta* and *B. praetermissa* persist at least until the young fruits start developing. In *B. modesta*, however, the bracteoles are inserted just below the calyx and tend to be more or less appressed to the pedicel or base of the calyx while the flowers are very young, whereas in *B. praetermissa* the bracteoles are inserted towards the middle of the pedicel. *B. praetermissa* differs also in that the apices of the keel petals are usually glabrous.

B. modesta is unusual amongst the Western Australian *Bossiaea* species in being a weak-stemmed lax subshrub. It is an inconspicuous element of the understorey and easily overlooked. The specific epithet alludes to the inconspicuous nature of the species.

The colouration of the standard petal is reminiscent of that of some of the *Isotropis* spp.

This species was first collected by Margaret Corrick in 1983 who, as far as I know, is the only person to have collected the species. She has returned to the area several times over the years and collected the range of excellent flowering and fruiting material upon which the description has been based.

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